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10/009456

SEQUENCE LISTING

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<120> Methods Using Mechanisms of Action of  
AroA

<130> GM50053

<140> To Be Assigned  
<141> 2001-11-05

<150> PCT/US00/12251  
<151> 2000-05-04

<150> 60/133,070  
<151> 1999-05-07

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<211> 1284  
<212> DNA  
<213> Streptococcus pneumoniae

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gatattctgc gaggtgaaga cgttcttcg accatgcagg ttttcgtga ctttgtgtt 180  
gaaaattgagg ataaaagatgg gtttattacc gttcaaggtg taggcattgc tggctaaaa 240  
gcgcgcgcaaa atgcccttaa tatggaaat tctggcacct cgattcgcc tatttcaggt 300

gtccttgcgtg gtgcagattt cgaagttagag atgtttggag atgatagtct ttccaaacgt 350  
cctatggacc gtgtgaccct tccactgaaa aaaatggcg tcagcatctc agggcaaact 400  
gaacgagact tgcctccct tcgcttaaaa gggacgaaaa acctaagacc tattcattat 450  
gagttgccaa ttgcctctgc ccaagtcaag tcagccttga tgtttgcagc ctacaagct 500  
aagggggagt cagttattat cgaaaaagag tacacccgt atcatactga agatatgttg 600  
caacaatttg gtggtcattt aagtgtggat ggtaagaaaa tcacagtcca agggccacaa 650  
aaattgacag gacagaaggt ggtcgtacca ggagatattt ccagtgcagc ctttggta 700  
gtcgcagggt tgattgctcc aaattctcg tctatgc agaatgtgg gataaacgaa 780  
actcgcacccg gtattattga tgcattcg tccatgggtg gaaaattgga aataactgaa 840  
atcgatccag tgcctaaatc tgcaaccttg attgttggat cttctgactt gaaaggaaca 900  
gagatttggat gcgcgtttgat tccacgtttt attgtatgaat tgcctattat tgcctactt 960  
gcgcacccaaag cccaaagggt aacagttatc aaggatgctg aggagctaa ggtcaaggaa 1020  
acagaccgtt ttcaggttgtt ggcagacgcc tttaatagta tgggagcaga tattactcct 1080  
acggcagatg ggttgttattt caaaggaaaa tcagcttcc acggtgctag agtcaatacg 1140  
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<:10> 2

<:11> 427

<:12> PRT

<:13> Streptococcus pneumoniae

<:100> 2

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Pro Gly Asp Lys Ser Ile Ser His Arg Ser Ile Ile Phe Gly Ser Leu  
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Ala Glu Gly Glu Thr Lys Val Tyr Asp Ile Leu Arg Gly Glu Asp Val  
35 40 45

Leu Ser Thr Met Gln Val Phe Arg Asp Leu Gly Val Glu Ile Glu Asp  
50 55 60

Lys Asp Gly Val Ile Thr Val Gln Gly Val Gly Met Ala Gly Leu Lys  
65 70 75 80

Ala Pro Gln Asn Ala Leu Asn Met Gly Asn Ser Gly Thr Ser Ile Arg  
85 90 95

Leu Ile Ser Gly Val Leu Ala Gly Ala Asp Phe Glu Val Glu Met Phe  
100 105 110

Gly Asp Asp Ser Leu Ser Lys Arg Pro Met Asp Arg Val Thr Leu Pro  
115 120 125

Leu Lys Lys Met Gly Val Ser Ile Ser Gly Gln Thr Glu Arg Asp Leu  
130 135 140  
Pro Pro Leu Arg Leu Lys Gly Thr Lys Asn Leu Arg Pro Ile His Tyr  
145 150 155 160  
Glu Leu Pro Ile Ala Ser Ala Gln Val Lys Ser Ala Leu Met Phe Ala  
165 170 175  
Ala Leu Gln Ala Lys Gly Glu Ser Val Ile Ile Glu Lys Glu Tyr Thr  
180 185 190  
Arg Asn His Thr Glu Asp Met Leu Gln Gln Phe Gly Gly His Leu Ser  
195 200 205  
Val Asp Gly Lys Lys Ile Thr Val Gln Gly Pro Gln Lys Leu Thr Gly  
210 215 220  
Gln Lys Val Val Val Pro Gly Asp Ile Ser Ser Ala Ala Phe Trp Leu  
225 230 235 240  
Val Ala Gly Leu Ile Ala Pro Asn Ser Arg Leu Val Leu Gln Asn Val  
245 250 255  
Gly Ile Asn Glu Thr Arg Thr Gly Ile Ile Asp Val Ile Arg Ala Met  
260 265 270  
Gly Gly Lys Leu Glu Ile Thr Glu Ile Asp Pro Val Ala Lys Ser Ala  
275 280 285  
Thr Leu Ile Val Glu Ser Ser Asp Leu Lys Gly Thr Glu Ile Cys Gly  
290 295 300  
Ala Leu Ile Pro Arg Leu Ile Asp Glu Leu Pro Ile Ile Ala Leu Leu  
305 310 315 320  
Ala Thr Gln Ala Gln Gly Val Thr Val Ile Lys Asp Ala Glu Glu Leu  
325 330 335  
Lys Val Lys Glu Thr Asp Arg Ile Gln Val Val Ala Asp Ala Leu Asn  
340 345 350  
Ser Met Gly Ala Asp Ile Thr Pro Thr Ala Asp Gly Met Ile Ile Lys  
355 360 365  
Gly Lys Ser Ala Leu His Gly Ala Arg Val Asn Thr Phe Gly Asp His  
370 375 380  
Arg Ile Gly Met Met Thr Ala Ile Ala Ala Leu Leu Val Ala Asp Gly  
385 390 395 400  
Glu Val Glu Leu Asp Arg Ala Glu Ala Ile Asn Thr Ser Tyr Pro Ser  
405 410 415  
Phe Phe Asp Asp Leu Glu Ser Leu Ile His Gly  
420 425

<310> 3  
<311> 1245  
<312> DNA  
<313> Streptococcus pneumoniae

<320>  
<321> unsure  
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<323> (492) (493) (494) (495) (496) (497) (498) (499)  
<323> Where n can be represented by a, c, t, or g

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gctgagggtg agaccaaggt ttatgatatt ctgcagggtg aacacgttct ttcgaccatg 120  
cagggttttc gtgacccctgg tggtaaatt gaggataaag atggggttat taccgttcaa 180  
ggtgttaggca tggctggctt aaaagcgccg caaaatgccc ttaaatatggg aaattctggc 240  
accctcgatcc gcctgatttc aggtgtcctt gctgggtgcag atttcgaagt agagatgttt 300  
ggagatgata gtctttccaa acgtccatcg gaccgtgtga cccttccact gaaaaaaatg 360  
ggcgtcagca tctcagggca aactgaacga gacttgcctc cccttcgctt taaaaggac 420  
gaaaaaaccta agacctattt attatgagtt gccaattgcc tctgccccaa tcaagtcagc 480  
cnnnnnnnnnnnnnnn taagggggag tcagttatta tcgaaaaaga gtacacccgt 540  
aatcataactg aagatatgtt gcaacaattt ggtggtcatt taatgttggg tggtaagaaa 600  
atcacagtcc aagggccaca aaaattgaca ggacagaagg tggtcgtacc aggagatatt 660  
tccagtgcag cctttgggt agtgcaggt ttgattgctc caaattctcg tctagtgcgt 720  
cagaatgtgg ggataaacga aactcgacc ggtattattt atgtcattcg tgccatgggt 780  
ggaaaaattgg aaataactga aatcgatcca gtcgctaaat ctgcaacctt gattgtttag 840  
tcttcgtact taaaagggaaac agagattgtt ggcgtttga ttccacgtt gattgtgaa 900  
ttgccttatta ttgccttact tgcgacccaa gcccacggta taacagtat caaggatgt 960  
ggggagtcgaa aggtcaagga aacagaccgt attcagggtt tggcagacgc cttaaatagt 1020  
atggggagcag atattactcc tacggcagat gggatgatta taaaaggaaa atcagcttt 1080  
caccgtgtca gagtcataac gtttggtgac caccgtatcg gcatgtgac agctatcgca 1140  
gccttattgg ttgcagatgg agaggtggag cttgaccgtg cagaagccat caataccago 1200  
tatcccttagtt tctttgatga tttggagagc ttgattcatg gctaa 1245

<310> 4  
<311> 415  
<312> PRT  
<313> Streptococcus pneumoniae

<320>

<221> unsure

<222> (149)((161)(162)(163)(164)(165)(166)(167)(168)♦

<223> Where Xaa can be represented by any one of the twenty naturally

<223> occurring proteins

<400> 4

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Phe	Gly	Ser	Leu	Ala	Glu	Gly	Glu	Thr	Lys	Val	Tyr	Asp	Ile	Leu	Arg	
				20				25					30			
Gly	Glu	His	Val	Leu	Ser	Thr	Met	Gln	Val	Phe	Arg	Asp	Leu	Gly	Val	
					35			40				45				
Glu	Ile	Glu	Asp	Lys	Asp	Gly	Val	Ile	Thr	Val	Gln	Gly	Val	Gly	Met	
				50				55			60					
Ala	Gly	Leu	Lys	Ala	Pro	Gln	Asn	Ala	Leu	Asn	Met	Gly	Asn	Ser	Gly	
				65				70			75		80			
Thr	Ser	Ile	Arg	Leu	Ile	Ser	Gly	Val	Leu	Ala	Gly	Ala	Asp	Phe	Glu	
					85				90			95				
Val	Glu	Met	Phe	Gly	Asp	Asp	Ser	Leu	Ser	Lys	Arg	Pro	Met	Asp	Arg	
					100				105			110				
Val	Thr	Leu	Pro	Leu	Lys	Lys	Met	Gly	Val	Ser	Ile	Ser	Gly	Gln	Thr	
					115			120			125					
Glu	Arg	Asp	Leu	Pro	Pro	Leu	Arg	Phe	Lys	Arg	Asp	Glu	Lys	Pro	Lys	
					130			135			140					
Thr	Tyr	Ser	Leu	Xaa	Xaa	Val	Ala	Asn	Cys	Leu	Cys	Pro	Ser	Gln	Val	Ser
					145			150			155		160			
Xaa	Lys	Gly	Glu	Ser	Val	Ile	Ile	Glu								
						165			170			175				
Lys	Glu	Tyr	Thr	Arg	Asn	His	Thr	Glu	Asp	Met	Leu	Gln	Gln	Phe	Gly	
						180			185			190				
Gly	His	Leu	Ser	Val	Asp	Gly	Lys	Lys	Ile	Thr	Val	Gln	Gly	Pro	Gln	
					195			200			205					
Lys	Leu	Thr	Gly	Gln	Lys	Val	Val	Val	Pro	Gly	Asp	Ile	Ser	Ser	Ala	
					210			215			220					
Ala	Phe	Trp	Leu	Val	Ala	Gly	Leu	Ile	Ala	Pro	Asn	Ser	Arg	Leu	Val	
					225			230			235		240			
Leu	Gln	Asn	Val	Gly	Ile	Asn	Glu	Thr	Arg	Thr	Gly	Ile	Ile	Asp	Val	
						245			250			255				
Ile	Arg	Ala	Met	Gly	Gly	Lys	Leu	Glu	Ile	Thr	Glu	Ile	Asp	Pro	Val	
					260			265			270					

Ala Lys Ser Ala Thr Leu Ile Val Glu Ser Ser Asp Leu Lys Gly Thr  
275 280 285  
Glu Ile Cys Gly Ala Leu Ile Pro Arg Leu Ile Asp Glu Leu Pro Ile  
290 295 300  
Ile Ala Leu Leu Ala Thr Gln Ala Gln Gly Val Thr Val Ile Lys Asp  
305 310 315 320  
Ala Glu Glu Leu Lys Val Lys Glu Thr Asp Arg Ile Gln Val Val Ala  
325 330 335  
Asp Ala Leu Asn Ser Met Gly Ala Asp Ile Thr Pro Thr Ala Asp Gly  
340 345 350  
Met Ile Ile Lys Gly Lys Ser Ala Leu His Gly Ala Arg Val Asn Thr  
355 360 365  
Phe Gly Asp His Arg Ile Gly Met Met Thr Ala Ile Ala Ala Leu Leu  
370 375 380  
Val Ala Asp Gly Glu Val Glu Leu Asp Arg Ala Glu Ala Ile Asn Thr  
385 390 395 400  
Ser Tyr Pro Ser Phe Phe Asp Asp Leu Glu Ser Leu Ile His Gly  
405 410 415